Enter Document Control Number or
Bar Code

60070602180

United States Environmental Protection Agency
Washington, DC 20460

ORIGINAL

Document Description	Date
Focus Notes L07-0299	7-19-07

[redacted]

EPA Form 7740-9 (rev. 10/92) Previous edition is obsolete

[redacted] Final

FOCUS REPORT
New Chemicals Program

PART I: BACKGROUND

Written By: KMB

FOCUS DATE: 7/9/2007 **FOCUS CHAIR:** D. Jones

COMPANY: Tracerco

CASE NUMBER(S): L07-0299 **through** **and**

PART II: SAT RESULTS

HEALTH: 1-2 **ECOTOX:** 1 **OCCUPATIONAL EXPOSURE:** 2-3A **CONSUMER EXPOSURE:** - **ENVIRONMENTAL RELEASES:** -

Additional SAT Information:

PART III: OTHER FACTORS

a. **PRODUCTION VOLUME:** 700 kg/yr

b. **PROD VOL OTHER:** ***Binding Option Marked***
LVE Assessed at Production Volume

c. **USE:** Tracer chemical to measure flow in deep oil-bearing strata

d. **REGULATORY HISTORY:** L07-0271 (F)□GRANTED WITH CONDITION
[redacted]

e. **TEST DATA:**

f. **IMPORTED** ☑ **MANUFACTURED** ☐ **BOTH** ☐

g. **MSDS:** ☑

h. **CATEGORY:** Neutral Organics **CATEGORY 2:**

PART IV: SUMMARY OF SAT ASSESSMENT

CASE NUMBERS: L07-0290 to L07-0330

FATE: MW162 to 216
solids with mp for L070271 (F) = 126 □C (M)
log Kow for the free acid = 1.8 to 2.9 (ClogP), 1.2 to 2.8 (EPI), 1.59 to 3.10 (M)
log Kow for L070271 = -5.87 with pH? (HPLC)
log Kow for L070296 = -2.11 with pH? (HPLC)
log Kow for L070297 = -3.62 with pH? (HPLC)
log Kow for L070298 = -1.64 with pH? (HPLC)
S > 200 mg/L to > 10 g/L at 20 □C (P)
vp < 1.0E-6 mm Hg or torr at 25 □C (P)
bp = 460 □C (P)
H for the covalent ion pair = 1.2E-7 to 9.5E-7 (P)
log Koc for the covalent ion pair = 1.4 to 2.0 (P)
log fish BCF = 0.50 (P)

8 0 0 7 0 0 0 2 1 9 0

sorption to sludge = low (P)

test data for L070271 for aerobic biodegradation in seawater at 20 C, via closed bottle (OECD306) were:

time (d)	biodegradation (percent)
5	0
14	2
28	63

test data for aerobic biodegradation for the [redacted] of L070299 from [redacted] were:
15% biodegradation in 28 d, thus, not readily biodegradable via CO2 evolution in modified Sturm test (OECD301B); if test result is due solely to ester hydrolysis and degradation of the [redacted], then removal via POTW of the parent would be >= 90% but notifier did not measured degradation products;

POTW removal = 0% to 90 via sorption and possible biodegradation
time for complete ultimate aerobic biodegradation = weeks to => months
sorption to soils and sediments = low (P)
PBT Potential: P2B1T2 to P3B1T2

HEALTH: Absorption nil thru skin based on physical/chemical properties; good thru lungs based on analogs; and good thru the GI tract based on analogs;

test data for the [redacted] of L070299, [redacted], were:
rat acute oral LD50 = 800 mg/kg with toxic signs; LD100 = 2 g/kg, LD0 = 300 mg/kg;
rat acute dermal LD0 = 2.0 g/kg with no toxic signs;
slight and transient (2 d) skin irritation in rabbits;
slight and transient (1 d) eye irritation in rabbits;
Ames test was negative;
E. coli test was negative;
chromosome aberration test with V79 cells was positive with activation, but negative without activation;
no skin sensitization in guinea pigs (M&K);
rat 28-d subchronic oral-gavage with doses = 1000, 300, and 100 mg/kg/d with NOAEL = 100 mg/kg/d and LOEL = 300 mg/kg/d based on salivation and increased water consumption; effects at 1000 mg/kg/d were slight to severe salivation, unsteady gait, motor activity significantly decreased and effects to the liver and kidneys;

concern for asthma and developmental toxicity based on data for benzoic acid, note: the mechanism for the asthma is unknown;

concern for possible mutagenicity, liver toxicity, and kidney toxicity based on data fo[redacted] which was the [redacted] of L070299, however, the [redacted] will have some acylating activity which is absent in the acid, thus, the acid will be less toxic than the [redacted];

low to moderate concern for toxicity

ECOTOX: Predicted (P) and measured (M) toxicity values in mg/L (ppm) are:

fish 96-h LC50	>	100.0	P	
SW fish 96-h LC50	=	440.0	M S,N	L070271
SW fish 96-h LC50	>	320.0	M S,N	L070290
SW fish 96-h LC50	>	320.0	M S,N	L070291
daphnid 48-h LC50	>	100.0	P	
SW invert Ac ton 48-h LC50	=	2830.0	M S,N	L070271
SW invert Ac ton 48-h LC50	=	1500.0	M S,N	L070290
SW invert Ac ton 48-h LC50	=	430.0	M S,N	L070291

SW invert Ac ton 48-h LC50 = 480.0 M S,N L070292
SW invert Ac ton 48-h LC50 = 270.0 M S,N L070293
SW invert Ac ton 48-h LC50 = 250.0 M S,N L070294
SW invert Ac ton 48-h LC50 = 250.0 M S,N L070295
SW invert Ac ton 48-h LC50 = 300.0 M S,N L070296
SW invert Ac ton 48-h LC50 = 430.0 M S,N L070297
SW invert Ac ton 48-h LC50 = 440.0 M S,N L070298
SW invert Ac ton 48-h LC50 = 170.0 M S,N L070299
SW invert Ac ton 48-h LC50 = 130.0 M S,N L070300
green algal 96-h EC50 > 100.0 P
SW algae Sk cost 72-h EC50 c = 250.0 M S,N L070271
SW algae Sk cost 72-h EC50 r > 10000.0 M S,N L070290
SW algae Sk cost 72-h EC50 r = 430.0 M S,N L070291
SW algae Sk cost 72-h EC50 r = 660.0 M S,N L070292
SW algae Sk cost 72-h EC50 r = 2100.0 M S,N L070296
SW algae Sk cost 72-h EC50 r = 1500.0 M S,N L070297
SW algae Sk cost 72-h EC50 r = 700.0 M S,N L070300
fish chronic value > 10.0 P
daphnid ChV > 10.0 P
algal ChV > 10.0 P
SW algae Sk cost ChV c = 100.0 M S,N L070271
SW algae Sk cost ChV r = 5600.0 M S,N L070290
SW algae Sk cost ChV r < 100.0 M S,N L070291
SW algae Sk cost ChV r = 320.0 M S,N L070292
SW algae Sk cost ChV r = 1000.0 M S,N L070296
SW algae Sk cost ChV r = 320.0 M S,N L070297
SW algae Sk cost ChV r = 320.0 M S,N L070300

benthic
SW invert Coror vol 10-d LC50 = 6558.0 mg/kg DWT M S,N L070271
SW invert Coror vol 10-d NOEC = 470.0 mg/kg DWT M S,N L070271

SW invert Coror vol 10-d LC50 = 7300.0 mg/kg DWT M S,N L070290
SW invert Coror vol 10-d NOEC = 1400.0 mg/kg DWT M S,N L070290

SW invert Coror vol 10-d LC50 = 3800.0 mg/kg DWT M S,N L070291
SW invert Coror vol 10-d NOEC = 150.0 mg/kg DWT M S,N L070291

SW invert Coror vol 10-d LC50 = 6700.0 mg/kg DWT M S,N L070292
SW invert Coror vol 10-d NOEC = 1400.0 mg/kg DWT M S,N L070292

SW invert Coror vol 10-d LC50 = 410.0 mg/kg DWT M S,N L070296
SW invert Coror vol 10-d NOEC = 130.0 mg/kg DWT M S,N L070296

SW invert Coror vol 10-d LC50 = 330.0 mg/kg DWT M S,N L070297
SW invert Coror vol 10-d NOEC = 160.0 mg/kg DWT M S,N L070297

SW invert Coror vol 10-d LC50 = 280.0 mg/kg DWT M S,N L070300
SW invert Coror vol 10-d NOEC = 16.0 mg/kg DWT M S,N L070300

Predictions are based on SARs for neutral organic chemicals with 10X less toxicity due to the substitution of the acid, or SARs for anionic surfactants-carboxylic acid-C4.Na; SAR chemical class = surfactant-anionic-F1 to F4 and CF3 benzene-COO.Na; MW162 to 216; solids with mp for L070271 (F) = 126 □C (M); log Kow for the free acid = 1.8 to 2.9 (ClogP), 1.2 to 2.8 (EPI), 1.59 to 3.10 (M); log Kow for L070271 = -5.87 with pH? (HPLC); S > 200 mg/L at 20 □C (P); pH7; effective concentrations based on 100% active ingredients and mean measured concentrations; hardness <150.0 mg/L as CaCO3; and TOC <2.0 mg/L;
low concern for toxicity
assessment factor = 10.0
concern concentration = 1.0 mg/L (ppm)

P2REC: forward to FOCUS with support.

PART V: RAD RISK RATIONALE: HUMAN HEALTH

PART VI: SUMMARY OF EXPOSURE/RELEASE

Proc:
1 site, 3 workers, 7 d/yr
Inhalation: Particulate: 1.4e+2 mg/d
Dermal: Not Required per SAT

Releases to Water 1: 1.0 kg/s/d, 7 d/yr
Releases to Water 2: 5.0e-1 kg/s/d, 7 d/yr
OR Air OR Incineration OR Landfill
Releases to Water 3: 1.0 kg/s/d, 7 d/yr
OR Incineration OR Landfill

Fate: Releases to Water 1, 2, & 3 (0% Removal Efficiency)
SWC: 347.71 ppb
DW: LADD: 1.14e-5 mg/kg/d, ADD: 2.85e-5 mg/kg/d, ADR: 1.74e-2 mg/kg/d
Fish: LADD: 1.55e-7 mg/kg/d, ADD: 3.87e-7 mg/kg/d, ADR: 4.33e-4 mg/kg/d
>COC (1,000 ppb): No Exceedance

Use:
7 site, 0 workers, 350 d/yr
Inhalation: Negligible
Dermal: Not Required per SAT

Releases to Water: 6.0e-1 kg/s/d, 1 d/yr
OR Incineration OR Landfill
Releases to Incineration: 2.8e-1 kg/yr

Fate: Releases to Water (0% Removal Efficiency)
SWC: 83.45 ppb
DW: LADD: 3.91e-7 mg/kg/d, ADD: 9.79e-7 mg/kg/d, ADR: 4.19e-3 mg/kg/d
Fish: LADD: 5.30e-9 mg/kg/d, ADD: 1.33e-8 mg/kg/d, ADR: 1.04e-4 mg/kg/d
>COC (1,000 ppb): No Exceedance

PART VII: FOCUS DECISION AND RATIONALE

DISPOSITION: LVE Final Conditional Grant

RATIONALE: L07-0299 was given a final conditional grant based on binding to the production volume of 700 kg/yr. Potential risks to human health were address by adequate respiratory protection. The Inhalation Monitoring Criteria for the Pilot Program were met for inhalation exposures from processing. No Inhalation Monitoring is requested. Concerns for potential risks to the environment were low based on low toxicity.

P2REC: This case was nominated for P2 recognition based on its intended use to replace radionuclides tracers used to measure the flow rate in oil-bearing strata and to adjust their pumping rate to achieve desirable flow characteristics. Its use will result in a reduced handling of radioactive materials by both contractors and oil production employees, as well as lower release of radioactive materials into the environment. The Focus participants decided to forward this claim.

PART VIII: CCD DISPOSITION / DD

CCD: